

# COUNTERMEASURE

ARMY GROUND RISK-MANAGEMENT PUBLICATION

VOL 22 NO 3

<http://safety.army.mil>

MARCH 2001

POV  
FATALITIES  
THRU JAN FY01 30  
THRU JAN FY00 39

## Civilians Are Key in Accident Prevention

**SPECIAL REPORT**

There are as many as 231,000 civilian workers who play a critical role in the civilian-military team effort that supports our operational, baseops, administrative, and technical Army. Now, more than ever, civilians are an important part of the team in preventing accidents.

# COUNTERMEASURE

MARCH 2001

VOLUME 22 NO 3

## The Official Safety Magazine for Army Ground Risk-Management



### Civilian Safety Record

This year's civilian safety record was a record low in the rate of civilian lost-time injuries and occupational illnesses. This is due to the teamwork of every Army soldier and civilian working for one cause—preventing accidents.

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### Have We Forgotten How to Teach "What RIGHT Looks Like"?

If the leader doesn't know right, he doesn't know wrong. And if he doesn't recognize wrong, he can't make it right. Recent accident investigations clearly indicate that many of our soldiers are not exercising this essential leadership quality.

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### The ABCs of ABS

A common misconception is that ABS-equipped vehicles can stop quicker than cars without the ABS. Read this and find out the real story.

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### In this issue...

A number of people have indicated they would like to see articles on such subjects as confined space; slips, trips, and falls; ergonomics, and occupational health issues. All of these subjects and more are covered in this issue. Although our focus this month is civilian accident prevention, the information applies to soldiers as well, especially for operations covered by OSHA regulations.

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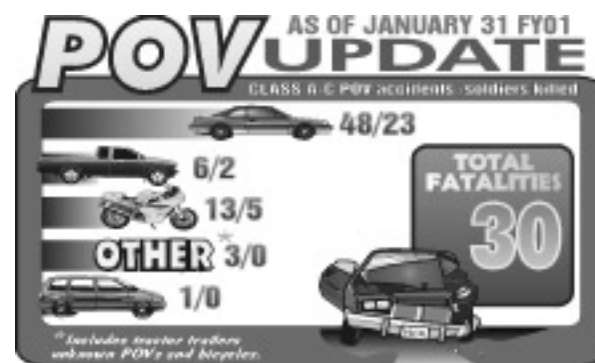
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Countermeasure is published monthly by the U.S. Army Safety Center, Fort Rucker, AL 36362-5363. Information is for accident prevention purposes only and is specifically prohibited for use for punitive purposes or matters of liability, litigation, or competition. Address questions about content to DSN 558-2688 (334-255-2688). To submit information for publication, use Fax 334-255-3003 (Ms. Paula Allman) or e-mail [countermeasure@safetycenter.army.mil](mailto:countermeasure@safetycenter.army.mil). Address questions about distribution to DSN 558-2062 (334-255-2062). Visit our website at <http://safety.army.mil>

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# Civilian Safety Record

During FY00, the Army set a record low in the rate of civilian lost-time injuries and occupational illnesses per 100 civilian employees. While costs have remained about the same, lost-time injury and occupational illnesses decreased by over 10 percent below the 1999 rate.

**Civilian Lost-Time Claims**



The major types of job-related injuries to Army civilian employees continue to be physical impact; physical stress; and slips, trips and falls. The number one cause of lost-time injuries and illnesses remains back injuries caused by sprains and strains.

Civilian injuries do not come cheap to the Army. Currently, civilian employee occupational injuries and illnesses cost the Department of the Army over \$166 million each year in "direct costs." This would buy the Army approximately 83 Bradley fighting vehicles. Incidentally, "direct costs" do not include such indirect costs as lost production, disruption in the work area during and after

an injury, and costs of recruiting and training replacements.

The chart below of Chargeback Costs (the direct costs to the Army) shows that these costs have stayed about the same over the last 5 years, despite the steady decline in the numbers of civilian employees. In addition, the Office of Workers' Compensation Program (OWCP) chart also shows a steady decline in lost-time injuries over the past 5 years.

Complying with standards mandated by Federal law (such as those contained in OSHA standards, other Federal safety and health requirements, or DOD and Army standards), and applying the 5-step risk management process will go a long way toward preventing the majority of military and civilian accidents.

Additional information on the 5-step risk management process may be found at <http://safety.army.mil>; select *Guidance*, and then *Sustaining Base Operations*. There you will find the risk management process adapted to the garrison environment.

*Editor's note: Civilian lost-time injuries and illnesses are the most accurate method of civilian Army accident reporting. Civilian employees must submit claims to the Office of Workers' Compensation in order to get medical bills paid and to receive compensation for any lost wages as a result of injuries and illnesses.*

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## Workers' Compensation Chargeback Data

Category	FY96	FY97	FY98	FY99	FY00
a. Cases having chargeback costs	19,435	16,003	17,872	22,299	22,305
b. Total cost	164.0M	160.0M	161.2M	163.1M	167.0M
c. Cost per case (b. divided by a.)	8.44K	10.00K	9.02K	7.3K	7.49K

## OWCP Rates of Injuries and Illnesses Per 100 Employees

Category	FY96	FY97	FY98	FY99	FY00
Total Case Rate	4.30	4.30	4.34	4.31	4.4
Lost-Time Case Rate	2.41	2.28	2.34	2.02	1.81

# Army and Ergonomics

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**Y**ou've heard this word many times. In fact, in the past few years, you have been inundated with the term. Automobiles, hand tools, furniture, and even pens are now being offered by manufacturers who claim their products are "ergonomically designed." What do they mean? Just what constitutes an ergonomic design?

The word "ergo" is Greek for work, and "nomics" means the study of, so ergonomics is simply the study of work. The concept of ergonomics is to make the job fit the person instead of the person being forced to fit the job.

If we are referring to equipment or tools that are ergonomically designed, then it simply means that the equipment or tool is designed to fit the human body. In other words, the hand tools that are ergonomically designed have handles or grips that are curved to fit the hand better. These newer designed hand tools are usually lighter weight and have better grips that are padded. The padded handle or grip will help to soften the vibration of the hand tool.

When you order new tools, do you take into consideration the people who will have to use these tools? Is each person's grasp equal? How large is his/her hand? Is each person's reach the same? Some hand tools are heavy and require more strength in order to operate them safely. When ordering hand tools, think about these important points.

Too often we order equipment, tools, and machinery without consideration for the person who will operate or utilize that equipment. People come in all different shapes and sizes, but the equipment you order may not. What happens when you have different people who operate the same piece of equipment? Can each person safely reach the controls? Is each person tall enough to see the gauges? What about operating a vehicle? Have you ever driven a vehicle that belongs to someone else? Did you have to adjust the seat or the tilt of the steering wheel?

Dependent upon the individual operator, vehicles, equipment, and machinery can be safely operated only if the operator can

adequately (and comfortably) reach and see the controls. If that equipment is not adjustable, oftentimes the operator must work in an awkward, strained position. This can only lead to disaster.

## Who is affected?

Everyone is affected by workplace ergonomic hazards. The exposure ranges from clerical workers to maintenance personnel, from male to female, and from civilian to military. From the civilian computer operator to the soldier in the field, ergonomic hazards can greatly hamper the successful completion of the mission.

Ergonomics affects all Army personnel. In the ground arena, the design of the equipment and vehicles (both wheeled and track) affects how safely individuals can operate them. In aviation, the location of the controls and the design of the cockpit affect the ability of the pilot to fly that aircraft safely.

Ergonomics is not an office or a field thing. It is not a civilian or a military thing. It is not a ground or an aviation thing. It is an *everything*.

## The bottom line

Why should the Army be concerned about ergonomic hazards? Poor ergonomic design has a critical effect on Army production, readiness, and resources. While we are only now beginning to understand the true scope of the problem, private industry has been aware of it for some time.

According to the Occupational Safety and Health Administration (OSHA), businesses spend \$60 billion per year on workers' compensation related to Work-Related Musculoskeletal Disorders (WMSDs), or \$1 of every \$3. Yet, according to the Government Accounting Office (GAO), effective ergonomics programs can reduce this cost by 36 to 91 percent.

Approximately 1.8 million workers suffer from ergonomic injuries per year. Healthcare costs for companies have increased 2.5 times faster than any other benefit cost. Preventing just one WMSD saves companies an average of \$22,500.

## Mandatory program

Effective November 2000, OSHA has a new ergonomic standard, 29 CFR 1910.900. The Army has a requirement for each installation to have an active, effective ergonomics program. If you have not developed an ergonomics program for your site or if you want to be certain your program meets all of the requirements, the Center for Promotion and Preventive Medicine (CHPPM) has a guide that will assist you. Go to

<http://chppm-www.apgea.army.mil/ergopgm/tools/tools.HTM>. At this site, you will find *Tech Guide 220*, which is a step-by-step guide to setting up and managing an installation ergonomics program. You will also be able to download the Ergonomics Program Evaluation Checklist along with several other valuable ergonomic tools.

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# Confined Space: Dangerous and Deceptive

Joe entered the worksite and looked around. He was apparently the first member of the crew to return from lunch. Knowing they were behind schedule and not wanting to waste any time, Joe got his tools and descended into the pit. Putting down his tools, Joe turned to look at the work they had completed that morning. Suddenly overcome, Joe slumped to the floor, unconscious.

Five minutes later, Dave entered the worksite. Looking around, he saw no one and decided to walk over to the adjacent facility. Walking past the ladder, Dave glanced down and saw Joe lying on the floor of the pit. Without hesitation, Dave rushed down the ladder to Joe's rescue. Kneeling beside Joe, Dave started to shake him and try to revive him. Before Dave could even stand up, he lost consciousness and fell to the floor.

Ten minutes passed and the two remaining crewmembers returned to the worksite. Bill and Jack were buddies and had worked together for years. Looking around, they saw no one until Bill walked over to the ladder and looked into the hole. There he saw Joe and Dave, lifeless on the floor of the pit. Yelling for Jack to call for help, Bill started down the ladder. Sizing up the situation quickly, Jack stopped Bill from descending and made him come back up to the surface. Jack yelled, "If you enter that pit, you'll end up like they are."

Jack immediately dialed 911 for help. Rescue personnel responded, but it was too late. Joe

and Dave were dead. Bill and Jack watched in sorrow as their friends' bodies were raised out of the pit.

The sudden realization of how close he came to being the third casualty hit Bill and he turned to Jack. "Buddy, you saved my life. I owe you." Shaking his head, Jack responded, "No, you owe me nothing. I just couldn't let you go into that pit. I remembered what the instructor said in the confined space training—that rescuers often die in confined space accidents because they do not follow the guidelines."

## What is a confined space and how do we know if it is okay to enter it?

According to the Occupational Safety and Health Administration (OSHA), confined space means a space that: (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and (2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and (3) Is not designed for continuous employee occupancy.

According to the confined space OSHA standard, 29 CFR 1910.146, there are confined spaces and there are *permit-required* confined spaces (PRCS). What's the difference? To be considered a PRCS, a confined space has one or more of the following characteristics:

- Contains or has a potential to contain a hazardous atmosphere;



■ Contains a material that has the potential for engulfing an entrant;

■ Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

■ Contains any other recognized serious safety or health hazard.

The chart below demonstrates how to determine a PRCs from a confined space.

A hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

■ Flammable gas, vapor or mist in excess of 10 percent of its lower flammable limit (LFL).

■ Airborne combustible dust at a concentration that meets or exceeds its LFL.

■ Atmospheric oxygen below 19.5 percent or above 23.5 percent.

■ Atmospheric concentration of any substance greater than the permissible exposure limit (PEL).

■ Any other atmospheric condition that is immediately dangerous to life and health (IDLH).

Therefore, a non-permit confined space means a confined space that does *not* contain or, with respect to atmospheric hazards, have the potential to contain any hazard

capable of causing death or serious physical harm. According to the OSHA standard, your confined space program must include a written program that includes:

■ How the employer will prevent unauthorized entry.

■ Identification and evaluation of hazards before entry.

■ Procedures for atmospheric testing.

■ Provisions for one attendant outside space.

■ Procedures for responding to emergencies.

■ System for entry permits (issue, use and closing).

■ Procedures for evaluation and correction of entry operations hazards and procedures.

■ Training for entrant, attendant, and entry supervisor.

### Importance of the permit program

In order for work to be performed in a PRCs, there must be a permit system in place. If this system is adhered to, it helps ensure the correct procedures are followed and that accidents are prevented. Most confined space accidents are very serious—usually fatal—due to the exposures encountered. The permit for entry into a PRCs must:

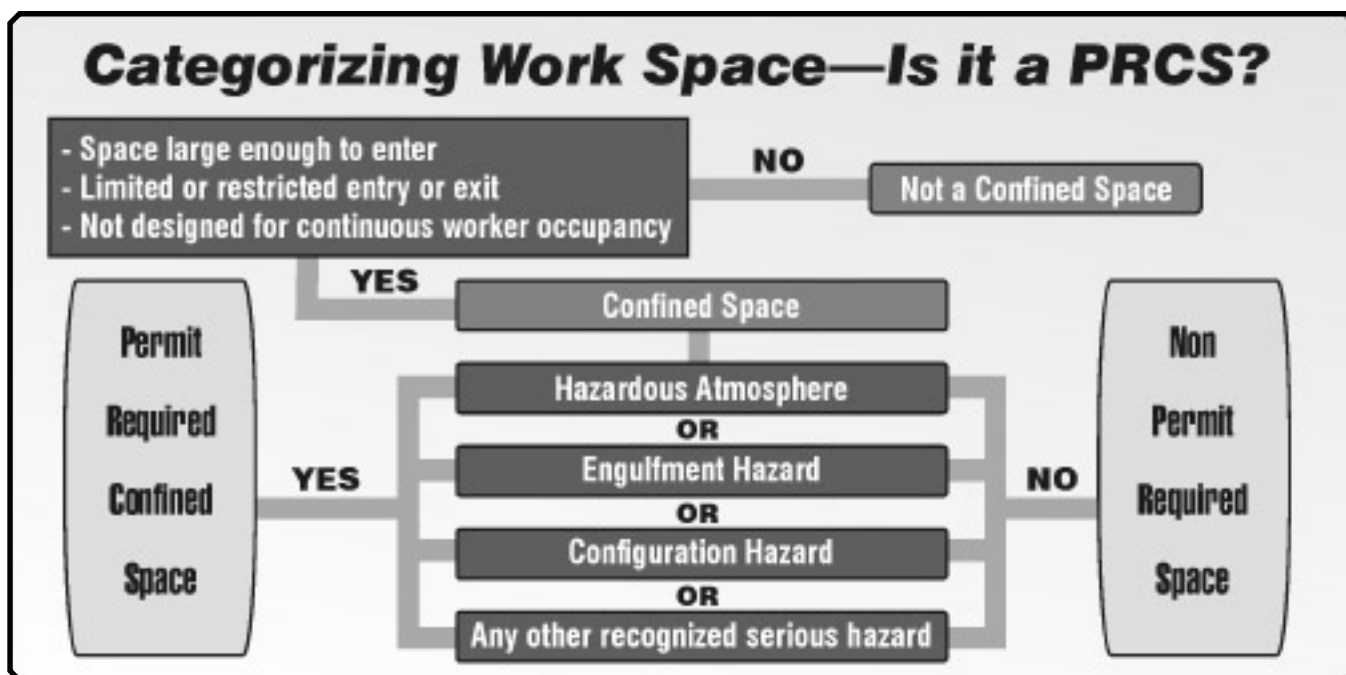
■ Be completed before entry.

■ Identify specific confined space.

■ List the purpose of entry.

■ Date the duration of the work.

■ List all authorized entrants.



- Name the attendant and supervisor.
- Identify the hazards of the permit space.
- State control measures that will be used.
- Indicate acceptable entry conditions.
- List results of atmospheric testing.
- Indicate how to summon rescue and emergency services.
- Display communications method.
- Display additional safety information.
- Display additional permits required (hot work, such as welding).

## Monitoring and ventilation

Testing and monitoring of the confined space must be accomplished by someone who has specialized training. When the confined space is being tested, the tests must be conducted in the proper order (from outside space). The first test is for oxygen content; second, for flammable gases and vapors; and third, for potential toxic chemicals.

Several locations of the confined space must be tested. Because some contaminants are heavier than others, the air must be tested at the top, middle and bottom of the confined space. Dependent upon the possible exposure and circumstances, continuous air monitoring may be required. If an airborne hazard is found, an air-powered blower is used to ventilate before and during entry. Above all, personnel may *not* enter until the hazardous atmosphere is eliminated.

## PPE for confined space entry

Personal protective equipment (PPE) is used only after all other possible controls are used. A full-body or chest harness, lifeline, and retrieval device must be at the site. Dependent upon the circumstances, both air-purifying and air-supplying respirators are required. Other PPE used will be dependent upon the configuration of the confined space and the nature of the work to be performed. The different types of PPE that can be used in confined space work include hard hats, safety goggles, safety shoes and boots, disposable suits, non-sparking flashlights and tools.

## Rescue and emergency

A recent report showed that 36 percent of confined space deaths are those who attempted to rescue someone in trouble. You must have a trained rescuer available. They can be in-house or from a local fire department—as long as

there exists a memorandum of agreement between that department and your installation.

Coordination and practice with the fire department should occur on a regular basis. One should never assume that the local fire department is trained or available for rescue. The non-entry rescue equipment (retrieval system, tripod, winch, etc.) used to lift an unconscious victim out of the space must be available.

## Attendant is most important factor

One of the most important factors of confined space rescue and emergency is the attendant. An attendant must remain on the outside of the entry of the confined space at all times while work is being performed. This attendant must stay in constant contact with the workers in the confined space. This contact can be visual or verbal. If the worker in the space will not always be visible to the attendant, then some type of communications equipment may be required. The attendant is not allowed to leave his or her post — even for “just a moment.” Nor may he or she enter the space to perform rescue. Instead, the attendant must be well versed in the methods of summoning emergency personnel for a rescue operation.

## Training

All confined space workers must be trained and certified before beginning duties. Entrants, attendants, supervisors, and rescue personnel must have the required training (based on OSHA standard). The training requires that individuals demonstrate the knowledge and skill necessary to perform assigned duties. Once the training has occurred, it must be documented and the records maintained.

## Safe operation

The potential for disaster certainly exists when working in a PRCs; however, these operations can be performed safely and with no casualties if you follow the guidelines and be alert to your surroundings. If you see someone in trouble in a confined space, call for help. Don't attempt the rescue yourself. Remember: A dead hero is still dead.

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# Have We Forgotten How to Teach “What RIGHT Looks Like”?

This is the first of a 5-part series on the risk management process. This article focuses on step 1 “Identify the hazard.”

**T**he greatest legacy that leaders can leave their subordinates is the ability to know what RIGHT looks like. Experience can certainly be a powerful teacher, but it can also be the most costly in terms of lives and materiel when a mistake is made that clearly could have been prevented if the leader knew what RIGHT looked like. If the leader doesn’t know RIGHT, he doesn’t know WRONG. And if he doesn’t recognize WRONG, he can’t make it RIGHT. Then, he’s doomed to needlessly repeat lessons

we fail to learn, sometimes tragically. In the language of risk management: If the leader doesn’t recognize the hazards (know what RIGHT looks like), then he won’t assess the risks and develop appropriate controls (turn WRONG into RIGHT).

Recent accidents indicate that some of our soldiers do not have this leader tool in their backpacks, so the obvious question is: “Why not?”

First, what do I mean by “What does RIGHT



**The platoon leader elected to cross this rain-swollen creek, not recognizing it as an impassable hazard. The result was a swamped vehicle.**





look like?" I define it as being able to instinctively assess a situation as a right or wrong way to do a task; and if wrong, take the appropriate action to avoid an accident—a *sixth sense* perhaps, or that feeling of hair rising on the back of your neck. Others might define it simply as common sense applied to a situation.

Whatever your definition, it is based on experience—yours or someone else's. For example, you wouldn't consider operating your privately owned vehicle (POV) without using your seatbelt. Someone taught you that. Likewise, you wouldn't allow anyone to ride in your vehicle without being belted in. Why? Because you **know what RIGHT looks like**.

Recent accident investigations clearly indicate that many of our soldiers are not exercising this absolutely essential leadership quality. Let me illustrate my argument.

An eager ground cavalry platoon leader took his M3A3 Bradley platoon to the field to conduct much needed training. When the platoon reached a rain-swollen creek, a squad leader, not recognizing it as an impassable hazard, elected to cross. The result was a swamped vehicle and a drowned soldier.

This training experience cost a soldier his life. Specifically, this accident had failures of **what RIGHT looks like** throughout the chain of command. The leaders responsible for training this platoon leader and his platoon sergeant

were nowhere to be found.

This is just the latest example in a very disturbing trend. Young leaders don't seem to recognize what RIGHT looks like, nor do they identify the hazard and appreciate the associated risk. How do we as leaders correct this trend? What is the mechanism in your unit that allows junior leaders the latitude to learn valuable lessons while still maintaining that necessary oversight to prevent accidents? Without an effective mentoring process, how will the future leaders of our Army build their foundation? In other words, how do you train a leader to **know what RIGHT looks like**?

Leadership remains an art, not a science. This simple statement means that the answer is not a checklist. The essence of mentoring from every level is that it builds competence and confidence in our leaders. Equally as clear is that mentoring does not occur if leaders are not present when their soldiers are training.

Remember, too, that the bad example is still a lesson learned. For example, who is to blame when the chain of command allows soldiers to use a propane heater in a location that the manufacturer clearly warns that it should not be used? The initial answer is clear, yet the deeper question is how did this chain of command not recognize this as WRONG and make it RIGHT?

This is the essence of knowing **what RIGHT looks like**. When you walk by a bad practice or overlook a standard not being met, you have taught the Army's young leaders a lesson. But you have taught what **WRONG** looks like; you have established a new, lower standard of acceptable performance; you have set young leaders up to repeat history's mistakes.

I have found nothing more rewarding in my military career than being in command of soldiers. Our soldiers need our very best effort as well as the opportunity to learn. Leaders must create the proper environment and then coach, teach, and mentor leaders at every level. Our Army needs it now more than ever. Pass on your talent and experience. Teach our soldiers to recognize what's WRONG so they **know what RIGHT looks like**.

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# Watch Your Step

**S**lips, trips, and falls are one of the major types of personnel injury accidents for both soldiers and the civilian workforce. According to the Occupational Safety and Health Administration (OSHA), slips, trips, and falls account for 15 percent of all accidental deaths in the U.S., and are second only to motor vehicles as a cause of fatal injury. Poor housekeeping, inadequate maintenance, improper procedures and inattention contribute to slips, trips, and falls.

## Army examples

A civilian office worker stepped into the hallway, slipped on the wet, slippery tile floor, and fell. She injured her knee, requiring medical treatment and lost one workday due to her injury. A cleaning crew had just finished waxing the hallway floor and warning signs were not posted.

A soldier was standing in an office chair with roller wheels while taking down office decorations. The chair was a quick shortcut instead of going to supply for a stepladder. The soldier fell and broke his wrist when the chair rolled while he was standing on it. The soldier required surgery, physical therapy, and he was on restricted duty for several months to recover.

A facility maintenance worker was climbing a wooden stepladder when a cracked step broke under his weight, and he fell. As a result of his fall, he strained his back and injured his leg. He failed to inspect the ladder before using it.

A soldier was wearing shower shoes while walking down stairs. He was hurrying down the stairs when he slipped and fell down the stairs resulting in a broken arm and leg.

Do these accidents sound familiar? Injuries from slips, trips and falls are common; therefore, let's look at some of the causes.

■ **Inattention.** Distractions like reading the paper while walking, or not paying attention

to the walking/working surface can lead to a fall. Many fall victims fail to look for hazards directly in the path of travel. Most tripping hazards can be avoided by paying attention to the path of travel.

### ■ Slippery and uneven work surfaces.

Slippery floors are often a result of inadequate housekeeping. Wax, water, spilled coffee, leaking oil from equipment, or ice outside a building entrance can all set the stage for a fall. Loose stair treads, broken floor tiles, and other uneven work surfaces can trip up the unwary. Develop an ice removal plan prior to the start of winter. The OSHA standards require that walking/working surfaces be maintained and kept in a clean and dry condition to prevent tripping hazards. Aisles and passageways must be kept clear and in good repair.

■ **Improper footwear.** Proper footwear can greatly reduce your potential for slips and falls. Traction is all about the contact between the walking surface and the boot or shoe sole. Slickness of soles and the types of heels need to be evaluated based on the work environment, tasks performed, and walking surfaces. Choose footwear based on function, not fashion. Investigate accidents involving slips and falls to determine if the type of footwear contributed to the accident.

■ **Tripping hazards.** Most tripping hazards are related to housekeeping standards. Electrical cords across office

aisles, water hoses across sidewalks, boxes of supplies in hallways are all tripping hazards that must be fixed immediately. It is easy to become complacent about tripping hazards that you see every day.

■ **Falls from elevation.** To prevent falls from elevation, OSHA general industry standards require platforms and work surfaces that are 4 feet or more above the adjacent floor or ground be protected by standard guard railings. Use covers or guard rails to protect

**Poor housekeeping, inadequate maintenance, improper procedures and inattention contribute to slips, trips, and falls.**

maintenance pits and other floor holes when not in use to prevent personnel from falling into them. Work above 6 feet may require use of fall protection equipment.

■ **Improper use or non-use of ladders.**

Chairs, furniture, and milk crates are not substitutes for a ladder. Use the right length ladder. A ladder should extend 3 feet above the roof, so you have handholds for getting on and off the ladder. Use a stepladder correctly; don't stand above the recommended safety limit. Portable ladders must be inspected, maintained, and used properly to avoid serious injury from falls. Tag and remove damaged or unserviceable ladders from the work area to prevent their continued use. Failing to secure the ladder or extending beyond safe reach limits are common unsafe behaviors leading to accidents.

For more on the OSHA standards related to walking/working surfaces visit OSHA's web site at <http://www.osha.gov>. The standards referenced are General Industry, 1910 Subpart D, Walking/Working Surfaces.

### **Risk management tips**

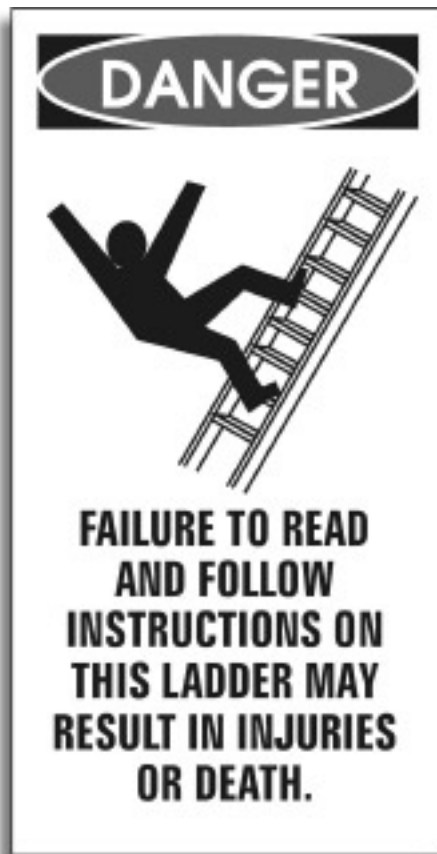
**Identify hazards.** Walking should not be a hazardous activity, yet many of our soldier and civilian employee injuries are a result of slips, trips, and falls. Unsafe behavior, equipment, and workplace conditions can all create hazards that may be stepped over every day (no pun intended). It is easy to become complacent about water or oil spills on the floor, cluttered aisles, inadequate lighting, and inadequately maintained ladders and work surfaces.

**Assess hazards.** *Probability*—A large portion of injuries occur from same-level falls and ascending and descending stairs. *Severity*—Slips, trips, and falls from any level may result in head injuries, back injuries, lacerations, fractures, and pulled muscles. Working from ladders and any elevated work above 6 feet

increases the potential for serious injury from a fall. Additional safety measures are necessary for elevated work.

**Develop risk controls and make risk decisions.** Provide a safe work environment. Basic requirements for walking/working surfaces are found in OSHA Standard 1910.22.

Use non-slip mats or apply anti-slip coatings to areas that are routinely exposed to water or other liquid spills to improve traction. Use catch pans under vehicles during maintenance and liquid absorbing mats where necessary to control the spread of liquid spills. Provide spill control materials near potential spill sources. Wear proper footwear for the environment and work performed. Replace worn tiles and stair treads, curling mats, and missing drain covers. Improve lighting where necessary. Establish and enforce standards for housekeeping to prevent cluttered aisles and work areas. Finally, train personnel in hazard prevention, recognition, and control. Controlling the causes for slips, trips, and falls requires everyone's



participation.

**Implement controls.** Management must commit to actions that apply required engineering controls and improve work procedures. Supervisors discuss safe work practices during job assignments. Employees must use their training to recognize and avoid hazardous conditions.

**Supervise and evaluate.** Supervisors maintain standards by monitoring work practices to correct unsafe behavior and conditions. Follow-up on facilities maintenance problems to ensure that proper work orders are submitted and funding is available. Involve employees in the hazard control process by encouraging immediate reporting of workplace hazards.

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# Blame is Relative

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If someone else trips over an object lying on the floor, he is clumsy. But if we trip over it, we blame the thoughtless fool who left it there. If we pass an overturned car on the highway, it is clear that some idiot was going too fast. If we have a wreck, we point our fingers at the jerk who ran us off the road. If we hear of somebody cutting off his finger in a circular saw, it is plain that the silly person didn't know how to work safely. But, if we cut off a finger, we blame the manufacturer for not having enough safeguards.

## How do accidents like these happen?

The injured person in each case may give his version of the story. The foreman or employer may give another version.

The man whose finger is severed says he tried to work safely, but he could not watch

everything at once, and in any case, the saw should have been properly guarded.

The employer may say that it is impossible to guard careless employees.

## The simple facts

Employers are legally and morally responsible for protecting their employees from both the circumstances that may cause accidents and from their workers' ignorance or lack of care that actually causes those injuries.

It is easy to blame others when something goes wrong, but it is necessary for each of us to realize our own contribution to the accident, and not to rationalize.

When we start throwing stones of blame, we may shatter our own glass houses.

*Editor's note: We found this bit of wisdom in a newsletter produced by Kemper Insurance.*

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# Protect Yourself, Why Take the Chance?

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A temporary employee was filling a small container with acid from a large drum. The caustic chemical splashed in the bottom of the container and into the worker's eyes. After flushing his eyes at the worksite, he was treated at the emergency room and lost several days of work. He received permanent damage to vision in one eye. He was not wearing eye protection as required by signs posted at the worksite. The supervisor did not enforce the standard.

A forklift operator drove too close to a warehouse worker and ran over his foot with the forklift wheel. The warehouse worker received emergency treatment for his broken foot, lost several days of work, and was on light duty for nearly 2 months. He was wearing tennis shoes instead of steel-toe footwear because tennis shoes were more comfortable.

A supervisor once told me that he couldn't get his employees to wear their personal protective equipment (PPE). Common excuses

were that their PPE didn't fit right, it was uncomfortable, safety goggles were dirty, employees were in a hurry, or (here's a good one) it wouldn't happen to them.

My response to him was that if you can get them to come to work on time, then you can enforce the wearing of PPE.

The supervisor has responsibility to enforce the standard. When employees understand the hazards, have the correct protective equipment that fits, and are adequately trained how to use it, they are more likely to perform to the standard.

When PPE is required to provide protection against a hazard, its use is not optional, it's a part of job performance. The Occupational Safety and Health Administration (OSHA) General Industry standards 1910.132 provides general requirements for PPE such as eye/face protection, hearing protection, respiratory protection, gloves, and safety shoes and boots.

## When is PPE needed?

Personal protective equipment is used as the last line of defense between the worker and a hazard. Engineering controls or administrative controls are used to eliminate or reduce the hazard where it is feasible to do so.

Operations requiring PPE / protective clothing and equipment (PPE/PCE) may include grinding, chipping, welding, handling or dispensing chemicals, painting, or other tasks where workers may be exposed to chemicals, dust, fumes, or other hazards with a potential for injury or occupational illness.

## PPE program

Leaders and managers are required to identify PPE requirements, issue and maintain protective equipment, train users, and ensure personnel use PPE correctly.

**Identify hazards.** Personal protective equipment is provided to protect against specific workplace hazards based on a hazard assessment. The hazard assessment normally includes a walk-through survey of the workplace to identify sources of hazards to workers, co-workers and visitors. The hazard assessment should consider the basic hazard categories:

- Sources of motion (moving machinery or parts)
- Impact (falling/flying particles)
- Penetration (sharp objects, tool blades, sharp edges)
- Compression (rolling or pinching objects)
- Chemical exposure
- Heat or cold
- Harmful dust
- Light (optical) radiation
- Electrical hazards

The possibility of exposure to several hazards simultaneously should also be considered.

*Note: Maintain written documentation of the hazard assessment and re-assess workplace hazards as necessary to address new equipment or processes and to correct accident causes.*

## PPE selection

Protective equipment is selected based on the hazard(s) and the work environment to

provide protection against the highest level of each hazard. For example, acid and chemical handling may require use of chemical protective goggles and a face shield to protect eyes and face, as well as protective apron or chemical protective coveralls and gloves. Protective devices do not provide unlimited protection. Barriers, shields, guards, and other engineering controls must be installed and maintained. Consult with safety and industrial hygiene professionals, as necessary, to determine the hazards and appropriate protective equipment. The latter is critical, using the wrong PPE for a job can lead to disaster; for example, using a particulate respirator while spraying paint containing isocyanates instead of using an organic vapor respirator can lead to incapacitation or death.

## Fitting and training

Once the correct protective equipment is selected, each user must be fitted with the equipment and given instruction on proper care and use of the PPE including warning labels and limitations. OSHA standards require that PPE users demonstrate an understanding of the instruction and an ability to use the PPE. Maintain training rosters or other documentation of training and provide update or re-training as necessary to maintain competency.

## Maintenance

Instructions for maintaining PPE are provided with the product packaging. If goggles or face shields are dirty, cloudy or so scratched that vision is impaired, employees are unlikely to use the equipment. No one wants to share a respirator that was worn by someone else and left covered with grunge. Follow the manufacturer's instructions for cleaning and keep equipment clean so it is available immediately when needed.

Using PPE properly is essential to job performance and injury prevention. The habits learned on the job should also carry over to your life off the job. *Protect yourself—wear your PPE.*

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**Using PPE properly is essential to job performance and injury prevention. Protect yourself—wear your PPE.**

# Industrial Truck Operator Training

**T**he Occupational Safety and Health Administration (OSHA) revised powered industrial truck operator instruction (commonly known as forklift training) to improve training and reduce workplace injuries and fatalities. OSHA now requires that operators of powered industrial trucks be trained in the operation of such vehicles before they are allowed to operate them independently.

Training must consist of instruction (both classroom-type and practical training) in proper vehicle operation, the hazards of operating the vehicle in the workplace, and the requirements of the OSHA standard for powered industrial trucks.

Operators who have completed training must then be evaluated while they operate the vehicle in the workplace. Operators must also be periodically evaluated (at least once every 3 years) to ensure that their skills remain intact at a high level, and they must receive refresher training whenever there is a demonstrated need for it.

The revised standard now mandates a training program that bases the amount and type of training required on the following:

- Operator's prior knowledge and skill.
- Types of powered industrial trucks the operator will operate in the workplace.
- Operator's demonstrated ability to operate a powered industrial truck safely.

Refresher training is required if:

- Operator is involved in an accident or a near-miss incident;
- Operator has been observed operating the vehicle in an unsafe manner;
- Operator has been determined during an evaluation to need additional training;
- There are changes in the workplace that could affect safe operations of the truck; or
- Operator is assigned to operate a different type of truck.

Training must be completed before the employee is assigned to operate a powered industrial truck.



According to OSHA, the rule will prevent 11 deaths and more than 9,400 injuries per year, as well as save employers \$135 million. Of this, \$83 million will be saved in reduced direct costs such as medical savings, administering workers' compensation, and the value of lost productivity. Another \$52 million will be saved in reducing accident-related property damage. The agency estimates the total annual cost of compliance at \$16.9 million.

Powered industrial truck operator training requirements apply to both military and civilian operators.

For more information on the revised powered industrial truck operator training rule, visit OSHA at

[http://www.osha-slc.gov/OshStd\\_toc/OSHA\\_Std\\_toc\\_1910.html](http://www.osha-slc.gov/OshStd_toc/OSHA_Std_toc_1910.html) Part 178(1).

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# The ABCs of ABS

When used properly, the antilock braking system (ABS) featured on most motor vehicles manufactured today can ultimately save lives. The ABS allows the driver to maintain directional stability, control oversteering, and in some situations, reduce the stopping distances during emergency braking situations, particularly on wet or slippery road surfaces. To gain this safety advantage, drivers must learn how to operate their antilock brake systems correctly.

The ABS works in consonance with the vehicle's regular brake system. It automatically changes the pressure in the vehicle's brake lines to maintain maximum brake performance just short of locking up the wheels. On vehicles not equipped with ABS, the driver can manually pump the brakes to prevent wheel lockup. On vehicles equipped with ABS, the driver's foot must remain firmly on the brake pedal, allowing the system to automatically pump the brakes using a series of electronically induced pulsations that can be felt through the brake pedal. Remember, maintain firm pressure on the pedal and do not pump the brakes on an ABS-equipped vehicle.

The ABS is important because when the brakes lock up on wet or slippery surfaces or during a panic stop, the ability to control the vehicle by means of steering is lost; therefore, erratic vehicle motion results. Rear-wheel-only ABS (normally found on pickup trucks and sport utility vehicles) prevents wheel lockup so that the vehicle stays in a straight line, but steering is lost if the front wheels lockup. If the vehicle is equipped with four-wheel ABS (normally found on passenger cars and minivans), steering control is maintained. With this system, it is possible to avoid an accident by steering around hazards if a complete stop

cannot be accomplished in time.

A common misconception is that ABS-equipped vehicles can stop quicker than cars without the ABS. The ABS is designed to

help the driver maintain control of the vehicle during emergency braking situations, not to make the vehicle stop quicker. The ABS may shorten stopping distances on wet or slippery surfaces, and many systems may shorten stopping distances on dry surfaces. On very soft surfaces such as loose gravel or unpacked snow, an ABS system may actually lengthen stopping distances. In wet or slippery conditions, you should still make sure you drive carefully. Always keep a safe distance behind the vehicle in front of you, and maintain a safe speed consistent with the road conditions.

Most new vehicles offer ABS as either standard or optional equipment. There are several ways to find out whether your

vehicle has antilock brakes.

- Read your vehicle owner's manual.
- Check your instrument panel for an amber ABS indicator light after you turn on the ignition.

- When you buy, lease or rent, ask your dealer or rental car company.

It is also important to know that in most vehicles equipped with ABS, it is speed activated. In other words, the ABS will not function at speeds below the manufacturer's indicated activation speed. You must reach a certain speed (in many cases 10-15 mph) to enable your system.

Remember that there is no substitute for safe driving practices, no matter if your vehicle has ABS or not.

Safe and attentive driving saves lives.

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**Maintain firm pressure on the pedal and do not pump the brakes on an ABS-equipped vehicle.**

# Safety Alert Notice

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In the past month, the Army has suffered two serious accidents that resulted in the death of soldiers. One of these accidents occurred while performing scheduled maintenance on a tracked vehicle, and the other occurred while moving a convoy of large wheeled vehicles. While these two accidents are non-related, they share similarities that warrant discussion. During both accidents, soldiers were performing day-to-day tasks that they had not been properly trained to perform. Unit leadership failed to ensure critical tasks were properly trained and that soldiers executed these tasks to standard.

In the tracked vehicle accident, a mechanic was performing required maintenance that he had not been trained on. No one in his chain of command checked to ensure he was properly qualified to perform the task or that he was following the procedures prescribed in the vehicle technical manual (TM). Soldiers cannot be expected to identify and control hazards that they do not know exist. This failure resulted in his death. The soldier was struck by a piece of equipment that ruptured due to nitrogen pressure not being released prior to disassembly. Effective leadership could have prevented or mitigated the severity of the accident. Instead, a leader joked with the soldier that he was taking longer than usual to complete the task.

In the other accident, a driver of a large wheeled vehicle was moving in close proximity to other vehicles and personnel. Unfortunately, he failed to ensure he had sufficient clearance to move his vehicle and struck a dismounted soldier. The dismounted soldier suffered fatal injuries. A review of the driver's records revealed that he had been recertified to drive this vehicle in the past year; however, the records did not indicate that he had received adequate training on this vehicle to safely conduct his mission. Further, the vehicle he was driving had numerous deadline deficiencies that the driver had not identified or corrected. No one in his chain of command had ensured that a preventive maintenance checks and services (PMCS) was completed on the vehicle.

Ensuring soldiers are properly prepared to perform their duties is a leader responsibility. Recent accident investigations indicate that some leaders have become complacent in ensuring that all critical tasks, regardless of how mundane, repetitive, or seemingly insignificant they appear, are trained to standard. This complacency contributed to the death of these two soldiers.

We can prevent these types of accidents by establishing unit leader development programs in accordance with (IAW) AR 350-41 and FMs 25-100/101, conducting effective risk management for all operations IAW AR 385-10, and providing the requisite oversight of all operations within the unit. Leadership at all levels is needed to prevent accidents. When we fail to train to and enforce established standards, we place our soldiers and mission success at risk. Keeping our soldiers safe is a leadership issue and effective training is one way for leaders to ensure soldier safety.



Gene M. LaCoste  
Brigadier General, GS  
Director of Army Safety